ing facts as a spread of from 1900 square miles to 3350 square miles, or nearly 150 per cent in Ohio, with an average increase of 100 per cent in intensity; in Michigan a spread of from 800 square miles to 2350 square miles, or nearly 300 per cent of the original territory, with a considerable increase in intensity; and a spread of from 750 square miles to 1300 square miles, or nearly 150 per cent, in northwestern Pennsylvania, with a marked increase in intensity. In addition to these developments, a limited infestation has appeared on the northeastern side of Staten Island. One new spot of infestation has appeared on Long Island close to the commercial sweet corn center, and a series of infestations has developed along the south shore of Connecticut in the towns of Bridgeport, West Haven, Old Lyme, New London, and Stonington.

The Canadian situation, which last year seemed to be fairly well in hand, has broken out with renewed intensity, and the principal dent corn growing areas in Essex and Kent Counties, Ontario, are now so seriously infested as to cause considerable commercial injury. The prevalence of moisture, heavy dews, and high humidity during the incubation of the eggs and during the early or first instar stage of the larvae apparently caused very little mortality of the eggs, and permitted large numbers of the larvae to become established in the tassels, leaves, stalks, and ears of the corn plants.

In Massachusetts there has been not only a very marked decrease in the intensity of infestation, but also very little spread in infestation. This decrease apparently is due principally to the adverse climatic conditions which prevailed during the summer of 1923. The thorough clean-up of fields, gardens, and small weed areas and the fall plowing of practically 90 per cent of the cultivated fields probably contributed considerably to the decrease in the infestation. In eastern New York the infestation remains about the same, that is, there has been very little spread and very little decrease in the intensity of the infestation. (*Author's abstract.*)

The paper was discussed by Messrs. Aldrich, Baker, Graf, Rohwer, and Sasscer.

Notes and discussion: Dr. Howard gave an informal talk on *Some entomologists at last summer's Stanford meeting and at the Hawaiian Conference.*

Dr. J. M. Aldrich read a note by R. C. Shannon, entitled *Brief history of egg-laying habits of Dermatobia.* The so-called human bot-fly, *Dermatobia hominis* L. f., of Tropical America is of great interest because its larva frequently parasitizes man, but it affords considerable added interest because of its most unusual method of disposing its eggs.

Its mode of attack was long a mystery. Published accounts of the larva and its parasitism in Man date as far back as 1749, but not until 1900—150 years later—was there any definite clue as to its secret method of attack. It was, naturally, believed that the adult fly came directly to the host and laid its eggs on the skin but no authentic records were ever published to show this to be true. The natives of the region believed that the bot was acquired through the attack of other insects, and among natives of certain regions it was called mosquito-worm.

During the years 1900–1910 a number of mosquitoes were collected in various parts of Central and South America which had the eggs of another insect attached to them and these, upon dissection, showed that they contained the larva of a bot-fly. The eggs, usually eight to ten to a mosquito, were placed on the lower surface of the abdomen and pointed obliquely downward and backward in such a manner that when the mosquito is sucking blood, the free, or hatching, end is nearest the skin of the host. The eggs are arranged in compact clusters and attached by means of a strong cement-

like substance. In practically all cases the mosquitoes were *Janthinosoma lutzii*, one of the most bloodthirsty mosquitoes in the tropics, and from this it was considered that the *Dermatobia* chose only the bloodsucking mosquitoes to be the carriers for its eggs.

The more recent observations of Adolpho Lutz of Brazil (1918) give a fairly complete life history. The flies, which parasitize numerous warm-blooded animals, birds, dogs, pigs, cattle, monkeys, and man, have been noted by Lutz to be attracted to cattle and to capture the blood and sweat sucking flies on the cattle, cage them within their legs, and oviposit their eggs on them, usually on the abdomen. Flies with such egg clusters have been kept by Lutz until the larvae within the eggs were ready to hatch, and at this time, when the eggs would be placed near the skin of man or dog, the larva would hatch and after a time would burrow in the skin of the host.

As far as is definitely known *Dermatobia* confines its choice of egg carriers to blood and sweat-feeding flies which it finds about animals at the time of oviposition.

However, the writer procured a mosquito, *Goeldia longipes*, while in Panama, which as far as known is non-bloodsucking, but which bears a cluster of eggs. This may possibly indicate a new phase, either in the life history of the mosquito or in the bot-fly. If the bot-fly only lays its eggs on insects found about animals it would indicate that *Goeldia longipes* is a bloodsucker. If this species of mosquito does not suck blood and is not attracted to animals it would tend to show that *Dermatobia* will lay eggs on mosquitoes and probably on any insect, no matter where it may be.

However, the principal question is: why does *Dermatobia* come to the animals to lay its eggs on other insects when it can apparently even more effectively apply them directly to the host itself?

CHAS. T. GREENE, *Secretary.*

SCIENTIFIC NOTES AND NEWS

Titles of papers in the symposium on *Chemistry in the field of microbiology*, to be given by the Division of Chemistry of Medicinal Products of the American Chemical Society at the Baltimore meeting of the American Chemical Society, April 7–10, are: T. B. JOHNSON, Yale University: *Application of the methods of organic chemistry to the study of the structure and composition of bacteria.* CARL VOEGTLIN, Hygienic Laboratory, Washington: *Chemical aspect of the therapeutic action of arsenicals.* JOHN W. CHURCHMAN, Cornell University Medical College: *Practical and technical consideration of the local and intravenous use of dyes* (tentative title). VEADER LEONARD, School of Hygiene and Public Health, Johns Hopkins University: *Internal antisepsis in its relation to chemistry and biology* (tentative title). G. W. RAIZISS, Philadelphia: *Bacterial chemotherapy with special reference to mercury dyestuffs.* E. C. WHITE, Hynson, Westcott, & Dunning, Baltimore: *Dyes used as tests of liver function* (scheduled for the joint meeting of the Organic Division on Tuesday).